

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.



U.S. Department
of Agriculture
Animal and Plant
Health Inspection
Service
Veterinary Services

August 1990

Emergency Programs Alert

Swine Blue Eye Disease



Emergency Programs

U.S. DEPT. OF AGRICULTURE
NATIONAL AGRICULTURAL LIBRARY
RECEIVED

APR 10 1992

ORDER UNIT
ACQUISITIONS SECTION

EMERGENCY PROGRAMS ALERT

SWINE BLUE EYE DISEASE (Blue Eye Paramyxovirus (BEP) Disease of Swine)

1. Definition. Blue eye disease is an acute, febrile, viral disease of swine characterized by encephalitis, corneal opacity, high mortality in affected litters of piglets, and sometimes severe central nervous signs in swine up to 45 Kg (100 lbs.), and loss of body weight and reproductive disease in breeding age swine.

2. Cause. Swine blue eye disease is caused by an unclassified virus that has been named Blue Eye Paramyxovirus (BEP)¹.

3. Background. Blue eye disease emerged in 1980 in central Mexico with numerous outbreaks of encephalitis and corneal opacity (pale blue discoloration in piglets). Blue eye disease has been reported in the Mexican Federal District, and in the States of Michoacan, Jalisco, Guanajuato, Nuevo Leon, Hidalgo, Tlaxcala, Queretaro, Tabasco, Yucatan, Tamaulipas, Puebla, and Campeche.

The disease was named "blue eye" disease by Mexican authorities.

4. Disease characteristics. Although the disease has only been confirmed in pigs, BEP was reported experimentally to infect mice, chicken embryos, rabbits, dogs, and cats. Antibodies were demonstrated in naturally-infected swine and experimentally-infected rabbits.

Antibodies usually persisted throughout life in affected swine. Some affected farms in enzootic areas experienced the disease again three years later. Periodic recurrences have been observed on farms with continuous systems of swine production. Outbreaks were more common from March to July, but the disease occurred throughout the year.

Blue eye disease was usually first observed in the farrowing house, with neurological disorders and high mortality in piglets. Corneal opacity was sometimes observed in weaned and fattening swine. Clinical signs were variable and were related to the age of the affected swine.

Piglets 2-15 days old were most susceptible with nervous signs, depression, and prostration appearing suddenly. Appetite continued while the piglets were able to walk. Other signs included dilated pupils, apparent blindness, nystagmus, swollen eyelids, inability to open eyes due to adherent exudate, and unilateral or bilateral corneal opacity in 1 to 10 percent of affected piglets.

Since 1983, blue eye disease has existed in 15 to 45 Kg weaning/fattening pigs (33 lbs to 100 lbs), on poorly managed farms that received animals continuously. A primary feature of the disease has been severe central nervous system signs. Various other diseases have also been observed on these farms. Affected gilts and other adult swine also occasionally developed corneal opacities. An increase in early return to estrus was observed in pregnant swine. Abortions have been observed. During outbreaks, stillbirths and mummified fetuses increased up to 24 percent and 5 percent, respectively.

In boars, reduced fertility associated with (usually unilateral) enlargement of the testicle and epididymis has been reported in 14 to 40 percent of animals on affected premises. Subsequent testicular atrophy, with or without granuloma formation in the epididymis, was also observed.

Deaths of the first piglets affected in an outbreak were within 48 hours of onset, but in later cases, death occurred after 4 to 6 days. Of litters farrowed during an outbreak, 20 to 65 percent were affected. Within litters, morbidity was 20 to 50 percent. From 87 to 90 percent of affected piglets died. Death losses continued for 2 to 9 weeks, depending upon the system of management.

Most sows of affected litters were clinically normal. Some sows had moderate loss of appetite 1 or 2 days before the appearance of disease in the piglets. Corneal opacity has been observed in sows in affected farrowing houses.

Weaned pigs more than 30 days old showed moderate, transient clinical signs: loss of appetite, fever, sneezing, and coughing. Rarely, nervous signs of depression, loss of balance, circling, and swaying of the head were observed.

Blue eye disease appeared to be self limiting. Once the initial outbreak was over, no new cases appeared unless susceptible pigs were introduced to an affected farm.

5. Diagnosis. The diagnosis of BEP requires isolation and identification of the virus, usually from nasal and ocular swabs collected during the first 3 to 5 days of infection. Place swabs in transport media with penicillin, streptomycin, and an antifungal agent. Specimens should be chilled and shipped to a laboratory to be specified by Emergency Programs.
(see "Reporting")

6. Reporting. Suspected occurrences of blue-eye disease should be immediately reported to Emergency Programs, Veterinary Services, U.S. Department of Agriculture, at Area Code (301) 436-8092, FTS 436-8092, or to the State livestock health official in the affected State.

1. H.A. Stephano and G.M. Gay. El sindrome del ojo azul. Estudio experimental. Memorias de la Reunion de Investigacion Pecuaria en Mexico. Mexico, D.F., p. 523, 1983. H.A. Stephano and G.M. Gay. Experimental studies of a new viral syndrome in pigs called "Blue Eye" characterized by encephalitis and corneal opacity. Proc. 8th Internatl. Pig Vet. Soc. Congr., p. 71, Ghent, Belgium, 1984.

